THE HORTICULTURIST
EDITED BY
HENRY T. WILLIAMS.
E. SEARS & CO.

VOL. 28. APRIL, 1873. NO. 322.

Garden Topics.

BY THE EDITOR.

The Fountain Plant.

Despite the adverse circumstances which may have produced its failure in some localities, the general testimony seems to be in its favor, and the Amaranthus salicifolius is a success. It appears to have met with more success in northern latitudes than in southern ones. We notice that the most enthusiastic commendations come from gardens located along the Hudson river, or in Vermont and Massachusetts—uniformly wherever the soil has been sandy. On the grounds of Hon. Horace Fairbanks, near St. Johnsbury, Vt., there was raised last year, by Alfred Parker, his gardener, a plant which was 7¼ feet in height, and ten feet around the branches, with a stem six inches in circumference. (So says the *Vermont Farmer*.) The seeds were sown in a pot in the greenhouse, in March, came up well, and grew slowly for a while. Mr. Parker then potted them separately, and they soon began to grow with surprising rapidity. Some of them were kept under glass all summer, others upon the verandah, and others still in the open ground; and they have done equally well in every place. No one can see these fine plants without being struck with their graceful habit of growth, their long, pendulous, and beautifully waved and crinkled foliage, as well as the striking and finely variegated colors of the whole plant. The stems are a dark red with a fine polish, the leaves at the tips of the main stem and branches form plumes of mixed crimson, yellow and green, very clear and vivid in coloring always, but varying in shade and tint with the degree of exposure to direct sunlight. The older leaves are mottled red and green, growing darker and somewhat duller with age, but never shabby or unpleasing in hue. So far is this plant from requiring a cool atmosphere and shelter from the sun, that Mr. Parker's plants did not begin to grow rapidly until warm weather began, and those that have had the most sun have grown the best and exhibited their desira-

ble characteristics the most satisfactorily. Altogether, we pronounce the "Fountain plant" a decided success, and a valuable addition to our list of ornamental plants for either indoor or outdoor decoration.

The Value of Planting Ornamental Trees.

It is really encouraging to behold our State Horticultural and Pomological Societies actually leaving the dry and profitless discussion of fruits, and taking up more time with the search for information about planting more trees, shrubs, vines, and ornamental plants. The difference between growing fruits for the palate for profit, or plants for their ornamental value, is decidedly marked. We are reminded, in this connection, of the remarks made some time ago by S. B. Parsons, before one of the Clubs of New York, in the course of which he said:

"Those who grow fruits for market do so for the purpose of making money by filling the stomachs of their customers. This is certainly a commendable and legitimate transaction, and I would not wish to discourage any one who is engaged in this business; still, there is very little in the mere act of growing fruits or plants for sale, that will develop the higher elements of our nature. But, on the other hand, the man who purchases a fine tree or shrub for the purpose of ornamenting his grounds, does not look upon them as a source of profit, but purely as an ornament—something that he can and does enjoy, free from sordid thoughts. I have been all through the various fruit 'fevers' that have prevailed during the past twenty years. I planted a large pear orchard; but the blight killed a portion, and a dry summer finished the remainder. When the grape fever was at its height, I planted two acres of Delaware; but my profits have been exceedingly small. Other varieties have done better, and with some kinds of fruit I have been partially successful. The taste for horticulture is rapidly increasing, and probably in no one branch is it more apparent than that of ornamental plants. Few men will, at the present time, live in a house not surrounded with ornamental trees. These may not be of the most costly varieties; and it is not necessary that they should be, for the dearest are not always the best. Our native trees are as beautiful as those of any other country, and the masses should become better acquainted with them by planting specimens in their grounds. I do not know of a more beautiful tree than the tulip, or whitewood, as it is sometimes called. The sugar or silver maples, liquid amber, magnolias, and scores of other native trees are to be had very cheap, and often for the mere cost of digging and planting.

"There is, however, a great want of taste in those who plant trees about their dwellings, and a majority of our people place them too near; and when they become large they overshadow the buildings and make the place look gloomy. No large trees should be placed nearer than one hundred feet to a dwelling-house. Place your large trees in a group, where they will form a background, and then gradually tone down with smaller trees and shrubs, until you reach the house, leaving it free to sunlight and air. Evergreen trees may also be planted in groups, or as borders to extensive grounds, and smaller evergreen shrubs placed within or by the side of them.

"There is too much sameness in the appearance of the leaves of our large evergreen trees to furnish a very great variety; but, by introducing what are termed the

broad-leaved evergreen shrubs, a striking effect can be produced. The rhododendrons are probably the very finest and best of all. Their leaves are not only superb, giving a cheerful appearance to a garden even in winter; but their flowers add another charm, which must be seen to be appreciated."

Remedies for Cabbage Lice.

The best remedies for this garden pest come from men who have actually experimented. We give two, which have proved successful, by gardeners. If any know more, we would like to hear of them.

A Kentucky gardener sends the following:

No. 1.—As soon as the plant begins to head, or as the louse makes its appearance, open the leaves carefully with the fingers, and sprinkle common salt between them. This is said to be an infallible remedy. We have used it with entire success. Plants used in this way produce larger and more solid heads than those left to themselves.

A California writer sends the following:

No. 2.—Two tablespoonfuls of kerosene mixed with a pint of water, and applied by rubbing it on the outside leaves. A couple of applications is usually sufficient.

New Rose, "James Sprunt."

This new climbing rose will be found one of the most valuable in the Southern States. In the Northern States it will do for summer exposure or greenhouse culture only. It grows to a height of six to ten feet in one season, blooming monthly. The bud is of dark rich crimson, becoming somewhat lighter when expanded, quite fragrant. It is thought by many to be only a "sport" from the well-known monthly crimson rose *Agrippina*, but is a quicker, more vigorous grower, and is hence more valuable as a climber or pillar rose. It was raised by James Sprunt, of Keenansville, N. C., the same horticulturist who originated the famous yellow tea rose "Isabella Sprunt."

The First Fuchsia.

The history of the first fuchsia, its introduction to Europe, and the commencement of its subsequent popularity, form a very romantic story, and we condense it from the original story as told by the *Gardener's Chronicle:*

Old Mr. Lee, a nurseryman and gardener near London, well known fifty or sixty years ago, was one day showing his variegated treasures to a friend, who suddenly turned to him and declared, "Well you have not in your collection a prettier flower than I saw this morning at Wapping." "No, and pray what was this phœnix like?" "Why, the plant was elegant, and the flower hung in rows like tassels from the pendant branches, their colors the richest crimson; in the center a fold of deep purple," and so forth. Particular directions being demanded and given, Mr. Lee posted off to the place, where he at once perceived that the plant was new in this part of the world. He saw and admired. Entering the house, he said, "My good woman this is a nice plant, I should like to buy it." "Ah, sir, I could not sell it for no money, for it was brought me from the West Indies by my husband, who has now left again, and I must keep it for his sake." "But I must have it." "Here," emptying his pockets, "here is gold, silver and copper;" (his stock was something more than eight guineas). "Well-a-day, but this is a power of money,

sure and sure!" "'Tis yours, and the plant is mine; and, my good dame, you shall have one of the first young ones I rear, to keep for your husband's sake."

A coach was called, in which was safely deposited our florist and his seemingly dear purchase. His first work was to pull off and utterly destroy every vestige of blossom and blossom-bud; it was divided into cuttings, which were forced into bark beds, and hot-beds, were re-divided and sub-divided. Every effort was used to multiply the plant. By the commencement of the next flowering season, Mr. Lee was the delighted possessor of three hundred fuchsia plants, all giving promise of blossom. The two which opened first were removed into his show-house. A lady came:

"Why, Mr. Lee, my dear Mr. Lee, where did you get this charming flower?" "Hem! 'tis a new thing, my lady—pretty, is it not?" "Pretty! 'tis lovely. Its price?" "A guinea. Thank your ladyship;" and one of the two plants stood proudly in her ladyship's boudoir. "My dear Charlotte! where did you get that elegant flower?" "Oh, 'tis a new thing; I saw it at old Lee's; pretty, is it not?" "Pretty! 'tis beautiful! Its price?" "A guinea; there was another left." The visitor's horses smoked off to the suburb; a third flowering plant stood on the spot whence the first had been taken. The second guinea was paid, and the second chosen fuchsia adorned the drawing-room of her second ladyship.

The scene was repeated, as new comers saw and were attracted by the beauty of the plant. New chariots flew to the gates of old Lee's nursery ground. Two fuchsias, young, graceful, and bursting into healthful flower, were constantly seen on the same spot in his repository. He neglected not to gladden the faithful sailor's wife by the promised gift; but ere the flower season closed 300 golden guineas clinked in his purse, the produce of the single shrub from the window in Wapping; the reward of the taste, decision, skill and perseverance of old Mr. Lee.

Filberts.

It is stated that fresh filberts imported from Kent, in England, with their heavy green husks on, are selling in our Broadway fruit shops, for 80 cents per lb. This raises a query why we cannot as well grow them here; our climate is certainly as well adapted to the shrub, as could be desired—and in the Middle States, especially, the peach districts of the Delaware Peninsula, the filberts would be a natural success, making thrifty growth, and abundant fruitage. Our nut bearing trees deserve better attention.

Soot.

The large quantities of soot which accumulate in and around the chimneys of country houses, can be turned to excellent account in our gardens.

Twelve quarts of soot in a hogshead of water, will make a powerful liquid manure, which will improve the growth of flowers, vegetables or root crops. In either a liquid or solid state, it makes an excellent top-dressing for grass or other cereal crops.

A List of Roses.

At this season almost every one is making their selection of roses. We need not give a list here of any elaborate varieties, but only repeat the following, which, by general agreement of the florists, is the best for ordinary amateur culture.

General Washington—Brilliant, rosy carmine, approaching to scarlet; very large and fine form; free bloomer.

Caroline de Sansal—Clear, delicate flesh color, becoming blush; large and full.

La Reine—Brilliant, glossy rose color; very large; cupped and beautiful.

John Hopper—Deep rose, with crimson center; very large and fine form.

Victor Verdier—Clear rose, globular, fine form, and free bloomer.

General Jacqueminot—Rich fiery crimson; abundant bloomer. One of the best for bouquets, but casts its petals too soon for a garden bloomer.

Baronne Prevost—Deep rose, very large and fine; free bloomer; vigorous grower.

Anne de Diesbach—Bright rosy carmine; beautiful form; very large and double.

Madame Alfred de Rougemont—Pure white; large and very double; profuse bloomer.

Triomphe de l'Exposition—Rich deep red, shaded with crimson; flowers in large clusters.

Sidonie—Light pink; very large and full; fine in autumn. also p. 157

New Remedies for Insects.

The following valuable remedies for insects are furnished by Charles R. Dodge, Assistant Entomologist of Department of Agriculture, and also the Entomological Editor of *The Rural Carolinian*. They are recommended as simple and reliable:

Pear Slugs.—This insect, which sometimes plays such sad havoc with the foliage of plum and cherry trees, may be destroyed by frequent applications of a mixture of lime, soot and soap-suds, by means of a garden syringe. The mixture is made by adding to twelve gallons of cold water, one bushel of soot and half a peck of unslacked lime, allowing it to stand one day to settle, after which is added one pound of soft soap dissolved in warm water.

The White Grub.—This destructive insect, producing in this country the May beetle, (*Lachnosterna*), and in Europe the beetle known by the common name of "Cockchafer," is well known to many of our readers through the damage it does to pastures and grass lands. Their mode of warfare is to devour the roots of the grass, causing the sod to die out in spots, and it is said that simply applying to the affected places water, in which petroleum has been stirred, will exterminate them. It is also recommended to keep down insects on plants. The small quantity of petroleum seems to impart its disagreeable properties to a large amount of water, and applied in this manner the plants are uninjured.

Mealy-bug.—The following remedy, tried upon grape vines (under glass) in Kellermont Gardens, Glasgow, was a complete success. The vines which were badly affected, were taken down, the loose bark scraped off, after which the back walls of the house were given two coatings of lime wash and glue, adding half a pint of turpentine to each gallon of the mixture. The rafters and glass were also given at intervals three washings of turpentine, and finally the vines themselves were given a good coating of the following mixture: Three ounces of soft soap, three ounces flower of sulphur, one pint tobacco water, two wineglassfuls of turpentine, one gallon of hot water, and clay enough to give it the consistency of paint. The result, with a top dressing of loam and horse dung, was healthy vines, and a fair crop of grapes, clean and free from mealy-bug.

Destroying Caterpillars.—An excellent remedy, which has been used on a large scale in Southern France, consists in a dilute solution of sulphide of potassium, at the rate of about one part in five hundred. The infested plants are to be sprinkled with the decoction by means of a garden syringe, and it is said that vegetation is not in the least injured by its application.

Improvements around Dwellings.

The following good suggestions are from the pen of Mr. D. Breckenridge, the Floral editor of the *American Farmer*:

The approaches of carriage drives to the country seats of our wealthy population, are very much too narrow; and the planting of tall growing trees, as well as of those of low growing, spreading habit, too near the verge, is a serious mistake which some owners of estates of considerable pretensions have found out to their cost. We think it would be well if those who contemplate planting ornamental trees, shrubs, etc., would observe the habit and size of trees of native growth of the kinds usually so much admired in their young state. For instance, a Norway Spruce, five feet in height, may have a handsome appearance when placed ten feet from the walk or drive, but fifteen to thirty years hence it will be a very different affair. But the Norway Spruce must always, however, have a prominent place in ornamental planting, being perfectly hardy and of good habit; and it would make an excellent background for avenue planting, if planted at a sufficient distance to allow of planting trees and shrubs of lower growth and distinct habit in front of them.

Then we have Thujopsis Borealis, Hemlock (*Abies canadensis*), and Cupressus Lawsoniana—the last a tree of handsome growth, but having planted a great many in years gone by, and having carefully observed it almost since its introduction into England, I am free to say that I have never seen a perfect plant of that variety; they invariably have a bare place somewhere. Nevertheless, this Cypress, I think, deserves a prominent place in ornamental planting. Of Arbor Vitæ we have two or three distinct varieties; and, again of Yews, we have those of both the erect and of spreading habit. Of Junipers, we may mention J. Chinensis, J. Hibernica; and of Retinisporæ, we have some hardy and pretty. In some situations, raised beds planted with Ivies, have a good effect; beds also of carefully selected hardy herbaceous plants might afterwards be introduced with much satisfaction, and with a little attention would give flowers the whole summer. Many undeservedly neglected plants might thus be again brought into favor.

Garden Vegetables.

We condense report from committee of vegetables, of Western N. Y. Society, as originally published in the *Rural Home*:

An expression of opinion as to the best and earliest tomatoes was called for. Mr. Charlton named General Grant as best for general crop. Mr. Elliott spoke highly of Hathaway's Excelsior as being next to Hubbard's Curled Leaf in earliness, smooth, solid, and more delicate than Trophy. P. C. Reynolds, Rochester, agreed with Mr. Elliott.

Sweet Corn.—Sylvester said Campbell's Early is the earliest. Elliott said Briggs' is earlier. Maxwell named Moore's Early Concord. Several spoke well of Black Sweet Corn, saying it is sweet and good.

Peas.—Dr. Beadle, Ontario, commended McLean's Advancer for later variety. In answer to inquiry: Champion of England, will yield more, but requires too much trouble in bushing. J. B. Jones, Macedon, likes the Edible Sweet Pod. P. C. Reynolds asked if any one knew of an earlier variety than Carter's First Crop, and was answered no. He also spoke of McLean's Little Gem as a dwarf of the best quality.

Beets.—The Egyptian Beet was commended by Mr. Elliott as earliest and best, but too small for the market gardener. He said it was four or five days earlier than Bassano. Sylvester named Hatch as best early. It was agreed that turnip-rooted beets should be cultivated shallow, so as to encourage forming root near surface.

Potatoes.—Mr. Fowler, Rochester, said Peerless yielded twice as much as Peachblow. Mr. Ryder agreed that it would yield twice as much, but was not as good. Mr. Sylvester—On rich, moist soil, worthless, but on a dry soil, of moderate fertility, excellent. Mr. Bronson—Good as Peachblow. Mr. Willard, Geneva, commended Campbell's Late Rose. Admitted that it was not quite as good as Early Rose. Mr. Van Dusen had raised some of Thorburn's Late Rose. Looked well, but had not eaten them. Mr. Elliott said that Thorburn's was a *sport* from Early Rose, while Campbell's was a *seedling*. Sports would produce part early and part late potatoes, while seedlings are uniform. Mr. Craine—Early Rose potatoes must be cooked right. If boiled in an iron kettle, and allowed to stand a few minutes, will taste bad, but if boiled in tin or porcelain, will be all right. Dr. Sylvester finds that Early Rose keeps till June, and will then steam up good. Digs his potatoes early, and keeps them in barrels in cool outhouses.

Parsnips.—Mr. Elliott had found the Student parsnip better than old varieties. It is of finer fiber, and sweeter. Sylvester indorsed Elliott's views. Mr. Brooks would commend the culture of parsnips to those farmers who have not yet dug their potatoes.

Beans.—Elliott prefers the White Wax, a snap bean, to the Black Wax. Remains tender as long, early, and its color makes it a better shell bean. Dr. Beadle prefers the flavor of China to Wax. Large Lima was generally commended as the best shell bean.

Turnips.—Dr. Beadle said they had in their market a variety called Nimble Dick, which is their earliest, and a variety called Sweet German, which they preferred for late.

Water Melons.—Mr. Elliott had tried a new variety, called Rattlesnake, which he thought better than any of the old sorts.

Best Six Pears.

Bartlett, Beurre d'Anjou, Howell, Duchesse, Lawrence, Seckel.

Advisable.—Beurre Bosc, Clairgeau.

Best New Pears.—Souvenir de Congres, Dana's Hovey, Mount Vernon.

Small Fruits for the Family Garden.

Read, by Louis Ritz, before the Eastern Ohio Horticultural Society.

[CONCLUDED.]

OF all the Black-cap varieties grown for market, the Doolittle for early, to be followed by the Mammoth Cluster or large Miami are the best; the difference in earliness between the Davison's Thornless and Doolittle is so slight, and the production of the latter so much larger, that I hold it to be more profitable of the two. The Mammoth Cluster I would consider the queen of Black-caps, as it stands unsurpassed for size, flavor or productiveness, if it was not too soft to be shipped a great distance; in our Cincinnati market it sells well, but dealers will not buy it for reshipment, and prefer for that purpose the common Miami.

Our Chillicothe friends spoke last winter very highly of the Chapman, and if it has all the good qualities of the Mammoth Cluster, without this defect, it should be planted in preference. If our pleasant visit to Chillicothe, last summer, had not convinced us to the contrary, I would feel inclined to consider our Ross county friends a very selfish people for keeping this Chapman berry so many years to themselves, and I hope they will furnish us to-day with some additional information.

I received some time ago from Kentucky, the Kentucky Mammoth, which if not identical with the Chapman, may prove its equal, being a strong grower, large, firm and very productive.

The above varieties will do equally well for the garden, where also the Miller or any of the Ohio Everbearing species would be appreciated.

Of red raspberries the Philadelphia is certainly the most productive in rich soil; of good size, but rather soft and deficient in flavor; its greatest defect, however, is its dark, dull color. In some markets color may not be so much of an object, but in Cincinnati the Philadelphia sells well only, if no lighter colored berries are in market, otherwise it will bring no more than Black-caps.

The hardiest of the Antwerps with me is the Clarke, which stood even the extremes of last winter without being injured, while the Philadelphia suffered severely for the first time. It is a strong, rampant grower, and on that account should be cut back during the summer, very large and productive, of fine color and highly flavored. In light soils the Clarke does not seem to be as reliable as in strong ones. Then we have the Parnell, not quite as hardy, but does well with a light shelter, and I may here state that both raspberries and blackberries seem to do better in young orchards, the shade being beneficial and trees protecting the more tender kinds in winter.

For the garden, the *Surpasse Fasstolff*, *Knevitt's Giant* and *Belle de Fontenay* are valuable; the latter yielded, the past summer, berries from June to the end of October.

Unsurpassed for home use is the *Surprise d'Antoinne*, bearing two crops, each equal to, if not excelling in quantity, the Philadelphia; it is of very large size, of the most delicate yellowish-white tint, and in flavor the superior of Brinkle's Orange or Arnold's seedlings.

The *Herstine* is the only new variety of great promise; it is a seedling of the Philadelphia, and will be *the* berry for profit, if only one-half the praise awarded to it is

deserved. It is a strong, healthy grower, thus far hardy and quite productive. I would not say more from my own observation, as I have not tried it long enough.

From actual measurement I found the following varieties to yield per stool, in 1871 and 1872, as follows:

	1871.	1872.
Naomi	1¼ quarts,	1⅝ quarts.
Franconia	1 "	⅓ "
Belle de Fontenay	½ "	1⅛ "
Clarke	1¼ "	1½ "
Parnell	⅜ "	1 "
Philadelphia	2 "	1⅝ "
Surprise d'Antoinne	1½ "	2⅜ "

I am satisfied that it will, when once well known, become a favorite in every fruit garden.

Blackberries.

Before raspberries are fully gone, blackberries make their appearance in market; I consider them, next to the strawberries, the most profitable fruit crop, while they require less labor and are more reliable. They should be planted in moderately good soil, 4 feet by 8; very rich land should be avoided, as they are not particular about soil or location, and the canes in rich land would grow so strong as to require too much pruning, while they are apt not to mature their wood and thus become subjected to being winter-killed. A repeated shortening-in of the cane and side branches during summer is beneficial, as they will become thereby self-sustaining, and be covered with berries from the ground upwards, instead of bearing only at the top. When desirable to stake them, I would recommend Mr. Ohmer's admirable plan, who trains blackberries and raspberries on wires, which requires less labor and expense than stakes, while better fruit is developed and the picking facilitated.

Of all the varieties that have appeared from time to time, we have only the Dorchesters, Wilson's Early, Kittatinny and Lawton—as valuable—left, and where the Wilson succeeds, the first may be dropped, as earliness is all that recommends it.

The *Wilson* is the largest and earliest, very productive and will yield more money per acre than any other; but the great question is its hardiness. The strong canes with me are regularly killed to the ground by frost, and only the smaller ones bear, but my soil is new and very rich, which may account for it; on thinner land they will prove, probably, more hardy.

The *Kittatinny* is also very large and productive, of excellent quality, and continues longer in bearing; it seems to succeed almost everywhere.

The *Lawton*, in strong loam, is very productive, but not reliable in light soils; wherever it does well, it will stand a comparison with the other varieties, while if you let it get fully ripe, there is no better berry for the table. I would recommend it for the garden, but not as a shipping berry, as it easily changes color.

For some years past a fungus or rust has been thinning out blackberry fields, and in some localities it has also attacked Black-cap raspberries; where it once takes well hold of the plants, it is as sure death as the pear blight, and if the plants are not removed, it will spread and destroy the patch in a few years. I think that a superabundance of moisture is the first cause of it, as some years ago, when we had a very cool and moist spring, I saw many plants in a Kittatinny patch attacked.

Durmg the exceedingly dry summer, however, which followed, the rust disappeared and the plants seemed to recover, though they never bore well since. No remedy is known thus far, and I hope some of our friends present may be able to throw more light on the subject.

Gooseberries.

Gooseberries seem for some years past to have attracted less attention; they are getting scarce in market, and consequently bring higher prices. We are dependent on the Houghton, Mountain Seedling, and Downing, of which the first is the most productive; the second the largest and the best for market when ripe; the third the best in flavor.

It is to be regretted that no efforts have been made to produce, by crossing the above with the Lancashire varieties, some larger and superior sorts, that would resist better our summer climate and prove valuable for the table. In speaking of English as Lancaster varieties, as we generally style them, although they grow to as great perfection anywhere on the continent of Europe as they do in England, I am of the opinion that they should not be abandoned without further trial. I doubt, myself, their being profitable in large plantations, as they would hardly receive the necessary care, but the amateur would find his labor well rewarded. I have grown English gooseberries for about twenty years, and never failed in raising a crop, when they received proper attention. I know they will mildew, but not worse than the Houghton, if the latter is left to itself.

The gooseberry requires a good, deep soil, replenished annually by some rich compost, and the ground has to be kept loose and free from weeds, as it has to be mulched. In Europe they train the gooseberry and currant into small trees, about two or three feet high; this will, however, not do in our climate, but I think we could improve on this method by raising the bush on a single stem, two or three inches high; this would allow of a better circulation of air and light, two great requisites in gooseberry culture. Let any one try this, and apply the flour of sulphur once or twice during the season, which I find quite necessary even with the Houghton, and he will be sure to reap his reward by raising a crop of large and delicious berries.

Currants.

Of this fruit we have a good many varieties, but only a few that are, with common culture, productive enough to make good returns; these are, the Red and White Dutch, and the Versailles, the latter with proper attention yielding more, larger and better fruit than the former. Some horticulturists seem to think the Versailles, and the Cherry or Victoria as identical; this is a mistake; the latter has shorter bunches, berries larger, dark red, very acid, maturing early, suffering frequently from spring frosts, and being on this account a shy bearer. The Versailles, on the contrary, is as productive as the Red Dutch, bunches long, berries large, transparent red, and having, when fully ripe, less acid than any other currant. The great trouble is only to find the true Versailles, as there are more Red Dutch and other kinds sold under that name than genuine plants. Currants at three dollars per bushel, the average price of the last two years, equal to $500 or $600 per acre, pays well enough, and more should be planted.

For the home garden, besides those named, the Frauendorf and Grape are worthy of mention. The lover of Black Currants will be pleased with the Black Naples. Of the new varieties, the Heterophylla (ant-leaved) makes a very ornamental bush, and a new kind, without seeds, lately received, will, if productive, prove valuable.

Currants, to do well, require about the same treatment as gooseberries, but look out for the worm, and dose him with hellebore, or cut the shoots he has attacked off during the winter; they can be easily distinguished.

It may not be out of place here, to remind you that in many parts of Ohio there is land well adapted to the growth of Whortleberries and Cranberries, which is now lying waste; experiments in this direction would probably lead to profitable result, and should be encouraged by this Society and our State Board of Agriculture.

Manure.

And now, in conclusion, a few words about manure. A liberal supply of it is, for all kinds of small fruits, not only a blessing, but a necessity. Animal manures range in value as follows: Cow, hog, sheep, horse's manure, and all should be well decomposed; ashes as an additional top-dressing in the fall or early spring, is very beneficial. Blood and horn shavings are the best for raspberries; salt scattered annually at the rate of one or two bushels per acre, over strawberry beds, will interfere materially with the grub worm, and assist the soil in retaining moisture; night dirt and hen manure should be applied sparingly, either in a liquid state during the fruiting season, or as a top-dressing after the frost has left the ground. Concentrated fertilizers, phosphates, guano, etc., applied as a liquid during the fruiting season, will materially increase the crop. I would, however, not advise their use, except where animal manures are given to the same land. They stimulate the soil to great exertions; and will naturally impoverish it, if the deficiency is not made up in some other way.

Flowers for Ornament and Decoration.

BY ANNE G. HALE.

[CONCLUDED.]

A TABLE or stand bouquet should be somewhat of a pyramid in shape, to form which, any flowers of medium size are proper—accompanied by their complementary colors in the racemes and spikes of finer florescence. But little verdure is needed—sufficient to outline the several groups that make up the assemblage, and to give a handsome base—unless the floral colors contrast well with the tinting of the vase. Though colorless, crystal vases are preferable for flowers, always. The opaque Parian, and the grays and neutral tints of ordinary biscuit-ware can be used advantageously as table or window vases, if the receptacle be nearly hidden by foliage and drooping flowers, or vines. Saxifrage, money-wort, ground or coliseum ivy, and German ivy, make a fine veil-hanging over and about a vase, and lend dignity and grace to the bouquet. The garden and orchard, from their flourishing plants, blooming shrubs, and blossoming trees, can send many species and varieties to make

these collections beautiful; while forest and fell, upland and moor, afford many lovely wildings. Nor will their more delicate relatives of the conservatory lose aught of their beauty or grandeur when mingled with them. Branches from plants of variegated foliage, or boughs of bright autumn leaves, without blossoms, make very elegant bouquets. The vase which they occupy should stand on a window seat, or on a table near by, that the sunlight may fall upon them; as the rays stream through and among them, their gorgeous colorings appear to fine advantage.

A perforated plate or cover for the top of a dish or vase is a great convenience for arranging flowers. There is then no danger of crowding them, and we can quickly see the effect of her work, as the bouquet is, as it were, *built* where it is to stand. The vase should be first filled with water, then the cover laid, and the stems inserted in the perforations. It is, however, usual to tie the flowers together in some manner; let it be as loosely as possible; see that there is no crushing or overlapping of flowers or buds; nor yet let the larger flowers be too prominent. When you have large and choice flowers, it is better to place one specimen, with its buds and appropriate adjuncts of foliage, and vines (both, or either, as the habits of the blossoms require) in a receptacle by itself. Several vases filled in this way make more effective display than if all were crowded into one group, and lend an air of elegance to a room, if disposed in proper localities. Bouquets of this style are more proper for the guest-chamber and the dressing-room. Flowers of medium size and delicate foliage should be used; their colors—speaking of quiet and repose—must be of the more subdued tints and the tenderest green.

For a hand-boquet, both foliage and flowers must be nicely chosen. Fragrance, not so important in other collections, is here an indispensable requisite. Among the most desirable verdure are, *Aloysia citriodora* (called by some Lippia); the lemon-scented verbena, with its elegant lanceolate leaves; sprays of the exquisite sweet brier (not omitting its lovely buds and blossoms); myrtle, box, lavender, the various fragrant geraniums, and odorous mints. Of the minor blossoms, mignonette, "the fragrant weed," is the favorite; then come heliotrope, stevia, violets and honeysuckles; mahernia, acacia and heath; while dianthus, in all its species, orange blossoms, tuberoses, lilies and roses add both beauty and fragrance; and pansies, daisies, forget-me-not and jasmine are always welcome.

A hand-bouquet should not be too large to be carried conveniently. It may be six inches (better five or four) in height, and four in diameter at its base. The flowers should be arranged in a somewhat conical shape; and though the bouquet must be regular in outline, it must not be too set. The green, projecting here and there to give distinctness to the several groups of which it is composed, will relieve it of formality, if the colors and forms are not too monotonous. A pleasing variety of these must be obtained, yet regard must be specially paid to proper contrasts and harmony. Many fine flowers are short-stemmed; others have very weak stems. To lengthen or to strengthen these, use slender twigs, or bits of willow or matchwood, or straws of matting, or broom-corn, fastening the flowers to these by hair twine, fine cord, or thread. When flowers are thus *improved*, a bit of wet cotton or moss should be wound over and around these false stems. Before making the bouquet, all that need this assistance must be made ready; then select the different groups, assort

them according to colors and forms, and apportion the green to each set. Damp moss and lycopodium will be needed, if the flowers are expected to keep fresh any length of time. To begin, take some handsome spike of florets having a long, strong stalk, with two or three slender spires of green (these also having long, strong stems); tie a cord by one end around them and bind them together for half an inch. Then arrange small groups of larger blossoms around these, just far enough below to show the first set handsomely, and wind the cord as before, and so proceed till the bouquet is of proper size. A few racemes or pendant flowers should be among the last set, which should be composed of panicles of fine florets, and then a fringe of drooping green, or a border of handsome leaves—myrtle, orange, camellia, or kalmia. Leave two or three inches of the bare stems, and wrap around them a strip of wet cotton batting; then cover this with a piece of tinfoil, and tie around about half way to the border, a neat bow of white ribbon. This is the most usual form of hand-bouquet; but a very pretty style is made by taking one beautiful flower for the center, surrounding this with contrasting florets; then larger flowers alternating with spikes and panicles of smaller; then a fringe of very fine and delicate florescence, a handsome border of foliage finishing the collection; very little green—and that of the most delicate sorts— projecting at rare intervals among the flowers. For this a stout stick is needed, upon and around which the flowers and foliage are bound, as in making the preceding bouquet. These are the popular methods of arranging flowers to be carried in the hand both as an ornament and a source of pleasure. But a few lilies of the valley with their own elegant leaves; a half-blown rose and buds; mignonette and sweet peas; or geranium leaves and carnations, afford more satisfaction, generally; are more effective in their simplicity, and can be disposed of more readily and gracefully as a personal decoration, at the belt or at the neck-tie, than those more elaborate collections, which often require some strength to carry in an upright position, and when not held thus must dangle heavily from the arms, or necessitate the services of an attendant. Button-hole bouquets and nosegays for tiny individual vases, at the dinner-table, should consist of only one handsome specimen of some elegant flower of small size, with its buds, or two or three slender spikelets of florets in a contrasting tint, and a little delicate verdure—all of the choicest sorts tied loosely with a bit of narrow ribbon. A little wet cotton should be wrapped about the base of the stems of a button-hole bouquet; or it should be inserted in the small tubes holding water, which are now made to attach to the button-hole; the small phials used for homœopathic medicine serve very well for this purpose, and can be fastened by a loop just inside the button-hole. Small bunches of flowers for looping or festooning the skirt of a lady's dress, should be of the same description as those used for button-hole bouquets. A half open rose with buds; a tuberose with bouvardia; a fuchsia and stevia; a carnation and heath; lilies of the valley and forget-me-not; violets and myrtle; sweet peas and mignonette; azalea and heliotrope, with geranium leaves, aloysia, or myrtle for verdure, are always elegant.

When decorations for the hair are wanted, drooping racemes, delicate flowering vines (or of verdure only) and pendant blossoms, with a few of erect clustered growth should be chosen. Of these, the most effective is smilax—*Myrsiphyllum asparagoides*—with glossy light green leaves that retain their freshness in the dryest atmos-

phere a long time. Its long slender stems of foliage, laid lightly on the head and drooping to the shoulder, with two or three rosebuds, lilies of the valley, fuchsias, or any of the papilionaceous blossoms make a very becoming decoration which is easily arranged. The maurandia, when in bloom, is a pretty vine to garland the hair; a bit of scarlet geranium or verbena should fasten it. Fronds of the slenderest ferns are very graceful head-dresses, with the addition of an azalea, or camellia, or rose; and long ribbons of variegated grass, with its plumy blossoms, are handsome verdure for stevia and bouvardia; while rose or lemon geranium leaves accord well with carnations or roses, and acacia or heath with tuberoses and adlumia, with its twining stems and drooping florets, and are very beautiful for the same purpose. But one caution is needful: there is danger of too much ornament; the lighter and simpler the arrangement, the more becoming it will be. And the same rule holds good in all floral decorations; crowding, and excess, and profusion detract from beauty and grace.

Strawberry Culture.

EDITOR OF THE HORTICULTURIST.—The article of F. A. Simpkins, on strawberry culture, in the January No. of THE HORTCULTURIST, should be qualified in some of its statements.

The object in mulching strawberries is fourfold:

First.—The first and primary object in mulching strawberries is to protect them during the late fall, winter, and early spring months. The object is not so much to keep the ground from freezing as to prevent the frequent thawing and freezing of the surface of the ground during alternating warm and cold days and nights. When the surface of the ground is once frozen in the fall, it is important that it should remain frozen until spring. This is especially the case with light soils. The repeated freezing and thawing of the surface very frequently results in the breaking of the main roots of the plant in case the ground is very wet. In case the ground is dry, the frequent freezing and thawing of the surface renders it still dryer, and the plant suffers for the want of moisture at the root, and from the action of the wind in moving the soil from the roots. These remarks are applicable to the light sandy soils, especially of the prairies of the West, and in latitudes where snow cannot be depended on for a covering during the winter, and where it is sufficiently cold during the winter months to freeze the soil frequently to any considerable depth. So much for winter mulching.

Second.—A second object in mulching strawberries, is to keep the surface of the ground cool, moist and mellow during the hot, dry season that usually sets in about the time the fruit is maturing. If the ground becomes hot, dry and hard just at this juncture, the crop will be cut short from one-half to two-thirds in quantity, and will be very inferior in quality. The quantity of mulching that can be used to advantage while the fruit is forming in the spring, will of course depend much on the mode of culture. On this point it will be sufficient to say, that let the mode of culture be what it may, whatever ground is not covered with vines, should be covered with mulching. If mulching has been used during the winter for a protection, it is well to remove it in the spring until the ground warms, and then to replace it.

Third.—A third object in mulching strawberries, is to keep down the weeds while the fruit is maturing. If it is replaced or put on in the spring in proper quantity, just after the weeds have started, it will keep them down pretty effectually until the crop of fruit is gathered.

Fourth.—A fourth object in mulching strawberries, is to keep the fruit clean. On light soils this is an important item. Strawberries grown upon the light soils of the prairies of the West, or upon the sand hills of Michigan, are often rendered unmarketable by the sand that is dashed upon them by heavy rains.

I might add as a fifth and collateral reason for mulching strawberries, that a good coat of mulching facilitates the picking of the fruit, and renders the work much more pleasant and cleanly.

These remarks might be extended by way of showing what is the best material for mulching, and what is the proper time for putting it on in the fall and for removing it in the spring; much might be said by way of illustrating the important collateral benefits of mulching, in giving the moisture and the gases of the atmosphere, access to the soil and to the roots of plants, etc., but I waive the consideration of these topics for the present.

Onarga, Ill. W. P. P.

Are Fruit Trees Gregarious.

IN your issue for November, page 342, Mr. R. W. Furnas, of Nebraska, asks: "Are fruit trees gregarious or clannish in their formation or development?" My observation is, that that they are not, for I have seen two trees produced from one pit containing a double seed, each tree producing a peach different from the other. Again, Mr. Clement of Branch county, Michigan, has an apple orchard of 200 trees, the seeds for which were saved from Fall Pippins, gathered from a tree in Ohio; in his orchard there are trees ripening their fruit in August and others later, and some will keep until April and May. Some are large and fine flavored, others are small and inferior; and these are intermixed promiscuously over the orchard. Again, in 1859, I sold five peach trees to a Dr. Merideth, in Hannibal; they were to be one of a kind ripening from the earliest to the latest; in 1861 they all bore, and what was my astonishment to be informed that none of them ripened until the middle of August, and in ten days were all ripe and gone. The trees were planted in rich garden soil, and made a vigorous growth. I had no reason for doubting the statement, yet it was a circumstance which I wished to make amends for to the fullest extent. I visited the place the next summer, and found the trees bearing according to order, and that the season before was only a sport. Although the instance which he gives would rather go to show that there was a clannish developement in his case; at least it's a condition which I would not like to attempt to produce from seed, and one that would require care on the part of both budder and planter to produce from budded trees. I am aware that our Western soil is spotted, there being often three or four different varieties of soil in one forty acre lot, which will make quite a difference in the size and color of fruit, but I don't think there is enough to change a yellow freestone to a red cling. Perhaps with another year's experience, friend Furnas may find some way to account for this singular circumstance, or that it was only a sport.

S. F. T.

Building Greenhouses.

WILL you please to advise me in regard to these enquiries:

First.—My employer is building a new place, and quite a discussion has arisen in regard to the greenhouse. In making some improvements, we excavated what was intended for a greenhouse cellar; others advise us now to close up the excavation, and have no cellar. My opinion has been asked and given as follows: Not to close up the cellar, but build it up frost-proof with proper ventilation, covering over with hard pine plank, tongued and grooved, and made water tight, the cellar to be kept for the storage of some plants and shrubs which will not stand the winter outside, and yet is not desirable to have them in the greenhouse.

Second.—In making borders for a hot grapery, which is the best, to make them all outside, or all inside, or both?

Third.—In making the borders for a cold grapery, which is best, all inside, or outside, or both?

The situation of the above place is a good deal exposed, standing about two hundred feet above tide water, and is at present very much exposed to the north and north-east winds. The building is intended to be about one hundred feet long, running north and south. The present calculation is to have a span roof, and to be divided into three apartments: First, on the north end, is to be a greenhouse; second, in the middle, is to be a forcing house for grapes, and third, on the south end, will, or is intended to be a cold grapery.

Any information from you or any other of the numerous patrons of THE HORTICULTURIST, will be thankfully received. JOHN IRVIN.

Small Greenhouses.

A Question for "The Horticulturist."

WE have a small well ventilated greenhouse, double pitch roof, 50 x 11 feet, fully occupied only in February and March for starting vegetable plants for our market garden; balance of the year as yet unprovided for; house generally filled with lettuce; location four miles from Harrisburgh, Pa.; too far for the cut flower trade, and besides market gardeners as a general rule don't very well understand the management of an assortment of flowers. There are thousands of market gardeners through the colder States that use greenhouses as above, and look to THE HORTICULTURIST for advice and assistance, and while these might not succeed with a general assortment of flowers, could do well with some *specialty*. The propagation and culture of some new *rose*, for instance, for the *trade by mail*. Cannot some of the many old greenhousemen among your subscribers give us a hint. Many of your readers are owners of small greenhouses; they would like to use them to advantage, and I am sure would be greatly interested in the replies. After a little ventilation, if some greenhousemen would advertise in your columns desirable stock which they could sell us for the purpose named, or give us on a percentage, they would find plenty of takers, more I am sure than they have any idea of.

The question is, what will it pay us market gardeners best to raise in our small greenhouses, from the middle of April to the first of February following, location within four or five miles of any large country towns. MARKET GARDENER.

THE WESTERN HORTICULTURIST
MARK MILLER EDITOR DES MOINES, IOWA

Root and Top Grafting—Twenty-five Years' Observation.

BY PROF. JAMES MATTHEWS, IOWA AGRICULTURAL COLLEGE.

ED. WESTERN HORTICULTURIST: Dear Sir—I believe there is at this time no diversity of opinion among Pomologists in regard to the alleged fact, that many varieties of fruits are greatly affected in size, flavor, appearance, fruitfulness, and even hardiness, by being planted and grown in different soils, localities and climates. That trees of many sorts and varieties may grow healthfully and vigorously, and be perfectly hardy in California, which will kill out by the far more rigorous winters of Iowa or Wisconsin, all fruit growers recognize as an established fact. Whether the physiological reasons for these things are well settled and understood, I will not, nor need I, now undertake to say.

But it is my present intention to introduce another subject in regard to which, while it is of the deepest concern to all fruit culturists, there is not a concurrence of public opinion. This being so, I introduce the topic without apology, with my own experience, observations and conclusions, together with the testimony of other fruit growers of undoubted experience, for the purpose of eliciting the opinions of others on the question involved. I hope every fruit grower, especially in the West, will freely communicate all the facts and experiences he may have had, which are germane to the subject.

The proposition, or problem, is, are certain varieties of fruits more hardy and prolific, and of superior size, beauty and flavor, when top-worked, that is, budded or grafted (the stock being hardy) two to five feet above the ground?

As I am aware that this is a controverted point, I will submit a statement of a few of the facts upon which I maintain the affirmative, for the consideration of those whose opinions are adverse to mine, as well as for those who have formed no definite conclusions in the matter of controversy. I shall give names and localities, so that if any desire to institute further investigations, they will have a fair opportunity of doing so.

On the first of April, 1872, I spent most of the day in the orchard of Mr. Drury Overton, one mile and a half from Knoxville, Iowa. This orchard contains from fifteen hundred to two thousand trees, most of which were planted twenty-three and twenty-four years ago, consequently passed the terrible winters of 1855 and '56, and 1856 and '7. Mr. Overton is an old nurseryman, having commenced the business in Henry county, Iowa, about thirty years ago; has been engaged in nursery and fruit growing ever since; is a modest and rather reticent man, but one of the closest and

most vigilant observers in fruit culture within my knowledge. In planting this orchard it so happened that almost every variety set out was divided between root and top grafts, hence affording a very favorable opportunity of testing the advantages and disadvantages of the two modes of grafting. On the occasion stated, Mr. Overton accompanied me, and my subsequent remarks in quotations are substantially, and as nearly as possible, in his own words, and taken down in pencil by me as we passed and were observing each variety.

White Winter Pearmain—"Does twice as well top-grafted as on root graft." Says, "This kind wants to be top-worked about five feet from the ground." Says also, that "the fruit scabs badly, even grown in this way."

Early Pennock—"Far better, and perfectly hardy when top-worked." I will remark that this kind on my grounds, root-grafted, is only half hardy, and a poor bearer. What specimens there are, however, are very fine.

Hubbardson's Nonsuch—"Splendid when top-worked, and perfectly hardy, but tender and indifferent when root-grafted."

Dyer—"A good bearer when top-worked; poor bearer when root-grafted. Hardy both ways."

American Golden Russet—"Killed in 1855, '6, even top-worked" (thermometer 32 below zero), "but has not been hurt since. Perfectly tender, root-grafted."

Roxbury Russet—"Does very well top-worked, but will not succeed root-grafted."

Fulton—"Only bears well when top-worked, but is hardy either way."

Swaar—"*First rate*, and good bearer when top-worked, but only succeeds in this way."

Esopus Spitzenburgh—"*First rate*, perfectly hardy, and bears well when top-worked, but will not succeed root-grafted."

These trees (two of them) have been planted out twenty-four years; stood the ordeal of 1855, '6, and 1856, '7, and now there are no sounder trees in the neighborhood. I tried this kind several years root-grafted, and after my best efforts entirely failed in bringing a single specimen to bearing size, but have known one or two instances where the fruit has been produced on root-grafted trees in clay soil.

Porter—"Fine, but only when top-worked."

American Summer Pearmain—"Perfectly hardy when top-worked, but does not bear satisfactorily even then."

Little Red Romanite (Gilpin)—"Hardy and a great bearer when top-worked; not hardy root-grafted."

Winesop—"Far better and more prolific when top-worked."

Michael Henry Pippin—"Good only when top-worked."

Fall Pippin—"Fine and hardy top-worked." This variety with me (root grafted) is only half hardy.

Jonathan—"Far better top-worked, standing side by side."

Tulpehocken—"Fine and quite hardy top-worked." In my grounds, root-grafted, this kind can only be considered half hardy, and is variable in quality.

Wagener—"First rate, and *don't blight* when top-budded." In my grounds this kind, root-grafted, is the worst *top blighter* I have.

In the hard winters previously alluded to (1855, '6, and 1856, '7), Mr. Overton's

trees of Rambo, root-grafted (about one hundred), were all killed to the ground, while in Mr. John Gamble's orchard, about one-quarter of a mile distant, there were two trees of this kind, top-grafted, planted out in 1851, twenty-two years ago, which were uninjured, are now perfectly sound and bear plentifully.

I will state here, that in Mr. Gamble's orchard are four trees of what he calls "Early Sheep's Nose," which is a very fine apple and great bearer, ripening in August; perfectly hardy top-worked, but tender and worthless root-grafted. This kind came from a nursery in Henry county, Iowa, twenty-two years ago. I cannot make it out to be identical with any other known variety, though it probably is. Can some one give information about it? Being a constant bearer, it is a very profitable summer fruit.

To close this communication, already too long, I will say that I have in my grounds at Knoxville, several trees of Williams' Favorite, four of which are top-grafted four feet or upwards from the ground; have been in bearing about ten years, and have never failed to produce a good crop annually, ripening gradually from fifteenth of August to about the last of September. They are among the best, and by far the most profitable summer apple I have; while I have three others, root-grafted, and five of such will not, in proportion to age and size, produce as much as one of the top-grafted trees. I will add further, that from an experience with this kind of ten years' fruiting, it is, for all qualities, without a rival as a summer fruit.

Knoxville, Iowa.

Pear Culture in California and France.

EXPERIENCE has demonstrated that the pear withstands the vicissitudes of the climatic influences of California, even better than the apple; and that its culture in all parts of the State has met with complete success. It is undoubtedly better fitted to the warm sunshine of our long summers than the apple, though the latter may find its genial position at heights among the foothills and mountains where the pear would not as well succeed.

Warm, sunny France has ever been the home and paradise of the pear, and from there we derived all of our best varieties, until at last a few kinds were originated in our own Atlantic country, worthy of a place in the catalogues of good pears. With our climate, so strikingly genial for the growth of this excellent fruit, we ought to originate at least a few new varieties equal to the best, and we hope pomologists will turn their attention to this subject.

The pear, particularly the autumn and winter varieties, will bear transportation better than the apple, and bring a higher price both in the home and Eastern markets. Indeed, it has already become an export fruit for the European market, and one which will increase as the qualities for export shall become more fully developed by experiment, and the tastes of consumers consulted.

Of all fruits, perhaps no one is better adapted to general use, as an article of food. Its inviting appearance, sprightly vinous flavor, sugary, melting, aromatic taste and nutritious ingredients, both in its fresh and cooked state, should commend this fruit to an increased and extensive cultivation.—*Pacific Rural Press.*

The Mechanical Structure of Plants.

BY J. COCHRANE, HAVANA, ILL.

ED. WESTERN HORTICULTURIST:—The wonderful mechanism of the human eye; the arrangement and construction of the ear; the number and diversified uses of the muscles; the mechanical organisms of plants; the diversified combinations of the elements; the immensity, harmony and diversity of the solar system, would almost lead us to believe that variety alone, distinct from every other consideration, was the motive and aim in the mind of the Creator, or with the agents of His will. The dissecting-room, the microscope and the laboratory but partially reveals to us the arcana of nature; but the science of astronomy, beyond all others, displays to us the splendor and the magnificence of His operations. Through this the mind rises to sublimer views of the Deity, though we cannot familiarize with the minor details in this department of His works.

There are a few observations on the vegetable kingdom that it will be our aim to notice. One great object of nature, in the structure of plants, is the perfecting of the seed, and its preservation until perfected. This intention shows itself, in the first place, by the care which seems to be taken to protect and ripen by every advantage that can be given them by situation *in* the plant, those parts which most immediately contribute to fructification, viz.: the anthers, the stamina, the stigma. These parts are usually lodged in the center, the recesses or the labyrinths of the flower during their tender and immature state; are shut up in the stalk or in the sheltering bud; but as soon as they have acquired firmness of texture sufficient to bear exposure, and are ready to perform the important office which is assigned them, they are disclosed to the light and air by the bursting of the stem, or the expansion of the petals; after which they have, in many cases, by the very form of the flower during its bloom, the light and warmth reflected on them from the concave side of the cup.

What is called also the sleep of plants, is the leaves or petals disposing themselves in such a manner as to shelter the stem, buds, or fruit. They turn up or fall down, according as this purpose renders either change of position necessary. In the growth of grain, whenever the plant begins to shoot, the two upper leaves join together and embrace the head, and protect it till the pulp has acquired a certain degree of consistency. In some water plants the flowering and fecundation are carried on with the stem, which afterward opens and loosens the impregnated seed. The pea tribe incloses the parts of fructification within a beautiful folding of the internal blossom, itself protected under a pent-house formed by the external petals. This structure is very artificial, and it adds to the value of it, though it may diminish the curiosity; it is very general. It has this further advantage, which is strictly mechanical, that all the blossoms turn their backs to the wind whenever it blows strong enough to endanger the delicate parts on which its seeds depend. It is an aptitude which results from the figure of the flower, and, as before remarked, strictly mechanical—as much so as the folding of the fans of the windmill, or the cap on the top of a chimney. The poppy and many similar flowers, the head, while it is growing, hangs down, a rigid curvature in the upper part of the stem giving it that position, and in

that position it is impenetrable by rain or moisture. When the head has acquired its size and is ready to open, the stalk erects itself for the purpose of presenting the flower and the instruments of fertilization to the genial influence of the sun's rays. This is a curious property provided for in the constitution of the plant; for if the stem be only bent by the weight of the head, how comes it to straighten itself when it is the heaviest? These instances show the attention of nature to this principal object, viz.: the safety and maturation of the parts upon which the seed depends. In trees, especially in those which are natives of colder climates, this point is taken up earlier. Many trees produce the embryo of their leaves and flowers in one year, and mature them the following year. There is a winter also to be got over. Now, what we are to remark is, how nature has prepared for the trials and severities of that season. These tender embryos are wrapped up with a compactness no art can imitate, in which state they compose what we call the bud. The bud itself is inclosed in scales, the remains of past leaves or the rudiments of future ones.

In the coldest climates a third preservative is added, by the bud having a coat of gum or resin, which, being congealed, resists moisture and frosts. On the approach of warm weather this gum is softened, and ceases to be a hindrance to the expansion of the leaves and flowers. The leaves themselves are packed in capsules or in vessels composed of coats, which, compared with the rest of the flower, are strong and tough. From this vessel projects a tube through which the fertilizing properties that issue from it are admitted into the seed.

Here occurs a mechanical variety accommodated to the different circumstances under which the same purpose is to be accomplished. In flowers which are erect, the pistils are shorter than the stamina, and the pollen shed from the anthera into the cup of the flowers is caught, in its descent, on the head of the pistils called stigma. In flowers that hang down or suspended (the crown imperial, etc.), this arrangement is reversed, the pistils being usually the longest, and its protruding summit receives the pollen as it falls to the ground.

The seed vessels are of an incalculable variety of forms in different plants, all evidently conducing to the same end, namely, the security of the seed. Of the gourd, melon, etc., the seed vessels assume an immense bulk; in stone fruits and nuts, incased in a strong shell, the shell itself incased in a pulp or husk; in numerous kinds of berries, in grapes, oranges, etc., the seed is inclosed in a glutinous syrup contained in a skin or bladder; in apples, pears, etc., imbedded in the heart of a firm, fleshy substance; or, as in strawberries, pricked into the surface of a soft pulp. These, and many other varieties exist in what we call fruits. In grain, in grasses, trees, shrubs and flowers the variety of seed vessels is incomputable. We have the seeds, as in the pea tribe, regularly disposed in parchment pods, which, though soft and membranous, are impervious to water; at other times, as in the bean, lined with a fine down. We have seeds packed in wool, as in the cottonwood, lodged between hard and compact scales; as in pine cones, protected by spines; as in the thistle, placed under a pent-house; as in the mushroom, in ferns, in slits on the back of the leaves; or as in grains and grasses covered by strong, close tunicles attached to a stem, according to an order appropriated to each species of plant.

[CONCLUDED NEXT MONTH.]

Care of Young Fruit Trees.

BY WILLIAM H. YEOMANS, COLUMBIA, CT.

ED. WESTERN HORTICULTURIST:—The great complaint of want of success in the cultivation of fruit trees, can in a great majority of cases be attributed to a lack of proper care. Not only after they are set, but at the time of setting; there is no doubt but that a tree may be so set as to disastrously affect the whole of its future growth; in fact the very life of the tree depends upon its setting. It is related, that a man having purchased one hundred apple trees, set a man at work setting the same, and having labored all day, reported having set ten trees. This so provoked the proprietor, that the man was discharged, and the next day another set to work. At night this man reported the remaining ninety trees all set. Now for the result. Of the one hundred trees set, every one of the ninety, set on the second day by the *rapid* workman died, while the ten set by the careful workman, every one lived. This case is undoubtedly very similar to many others, and ought to furnish a striking lesson of the necessity of all reasonable care. If the excavation is made of good size, the soil left loose and convex, to conform to the concave form of the roots, and the fine loose soil properly deposited upon the roots, and then compacted so as to be firm about them, it is believed that the tree will be almost sure of life, and upon the future care which it receives, depends its successful growth and fruitage. In an apple orchard there should be cultivation of the soil for at least eight or ten continuous years. While an orchard may be set in greensward and make a successful struggle for existence, and in process of time may come to bearing, the trees ever present a stunted appearance which time never overcomes. Such an orchard, however, by proper mulching, which serves a double purpose of cultivation and fertilizing, may be carried on so as to present a good appearance. But in the growth of trees, the main object is to obtain a good healthy body and head, which can be accomplished in no way better than by general cultivation of such crops as will afford least obstacle to the growth of the trees. It is far better, too, to remember the old maxim that, "just as the twig is bent, the tree is inclined," and so let the pruning be carefully and judiciously made, for the reason that it can be done with far less injury to the tree, and also the top of the tree more properly shaped. There is no doubt but that it is much better to train the trees with the tops as near the ground as possible, for the ease of picking the fruit. It is also questionable, whether it is not better to so arrange the trees by varieties, at such distances apart, that when arrived at full growth, they shall come very nearly together in their branches. This will very much affect vegetation, tending to keep the soil loose and moist as well as serving as a protection against winds, which otherwise would cause the fruit to fall. This, however, may be obviated by setting the trees at a greater distance apart, and planting alternate rows of evergreens. There is no doubt of the very great benefits of pursuing such a course. In every case, however, whatever system be pursued, let proper care be exercised.

Peculiar Winters.

BY WILLIAM P. LIPPINCOTT, VERNON, VAN BUREN CO., IOWA.

ED. WESTERN HORTICULTURIST:—This staunch old ship (the earth) has had an unusually hard time in doubling her Cape Horn (the perihelion point) this winter. Nearly all the time since the middle of November we have had unusually severe winter weather, the mercury getting down as low as 29° below zero here on the high prairie, and 36° below along the river. On the 19th ult., mercury about zero, ten miles from here, a house was struck with lightning, scattering the hot stove and its pipe about the room, and tearing up the floor. The discharge came from a small cloud passing over the house. Here, on the 29th ult., mercury 12° above zero, a clap of thunder issued from a small passing cloud. About the same time a church was destroyed by lightning in Mahaska county. Besides these unusual occurrences in cold winter weather, Iowa has never before had so much sickness; more than half of the people in these parts have been sick.

It is plain to an observer, that this winter in nearly all its vicissitudes, is different from any other winter that we know anything about. Can it be that we have been sweeping through the tail of a comet? Or, has the earth been attracted a little out of its orbit, when near the winter solstice, by some passing body? At this date, she is most likely in the old path, and speeding on to the vernal equinox, only a little beyond which, in our latitude, lies the green fields and flowery meadows, so heaven-like, and so well calculated to gladden the hearts of all animated beings.

Perhaps you remember the winter of 1842-43. During the months of February and March the cold was excessive. In the evenings of these two months, during twilight, and in the direction of where the sun sets, there was to be seen a cone-shaped light, differing from the twilight, extending about one quarter way to the zenith, and about half as broad at the base. This was a great wonder to people of these parts. Many were the conjectures what it could be. Some thought it was a comet's tail, others thought it was the zodiacal light. The ignorant and superstitious supposed it was a token of some great calamity approaching. It was probably the zodiacal light, but what made it so conspicuous at that particular time, when it can scarcely be seen at all since then? Of course it was the altered condition of the earth's atmosphere, but what made that, we cannot know.

On the 7th of April, of the year under consideration, the Des Moines river was still solidly frozen over, affording good teaming up and down, and across the river, which was much used, as roads were scarce and poor at that early day. When spring came, it was wet and lingering. Corn was planted late, scarcely any getting ripe. Wheat was a tolerable crop, grass was excellent, and prairie flowers as abundant and beautiful as at any previous time.

PLUMB'S CIDER APPLE.—After no little research for some months past, we have at length obtained a single specimen of this apple, and from a source, we suppose, that leaves no question of its being a true specimen of the apple called *Plumb's Cider*. We had prepared a truthful illustration of the fruit, with our impressions for the current number, but to give place to other matter longer on file, feel constrained to lay it over for another month; we can scarcely avoid, however, at this time, an expression of surprise over the long and persistent controversy had concerning the identity of this apple with *Smith's Cider*.

Meeting of the Minnesota Horticultural Society.

ED. WESTERN HORTICULTURIST:—The annual meeting of the Minnesota State Horticultural Society, was held in St. Paul, January 14th to 17th, and the following named gentlemen were elected officers for the ensuing year, viz.:

President—Truman M. Smith, St. Paul.

Vice-Presidents—Levi Nutting, Faribault; E. H. S. Dart, Owatonna; T. Ramsdale, Ramsey county. *Secretary*—John S. Harris, La Crescent. *Treasurer*—Wyman Elliot, Minneapolis.

Written reports were received from nearly every county in the State, showing that our people are awake and deeply interested in the advancement of horticulture. These reports show very encouraging results from the last three or four years' experience. After the reception of the reports, a list of apples was unanimously adopted for general cultivation, comprising the following varieties:

Tetofsky, Duchess of Oldenburg, Fameuse, Haas, Plumb's Cider, and Ben Davis. Also, a second list, for general trial:

Red Astrachan, St. Lawrence, Saxton, Price's Sweet, Tallman Sweet, Golden Russet, and Little Red Romanite.

Pears, grapes, strawberries, and other small fruits, also received due attention. Some time was spent in discussing the merits of various flowering, ornamental plants and shrubs, and a list adopted and recommended for general cultivation. Evergreens were quite freely discussed. The Norway Spruce, Austrian Pine, Scotch Pine, Balsam Fir, Arbor Vitæ, Black and White Spruce, and Red Cedar, were voted hardy in all sections of the State, and recommended for general planting. A great many good things were said and done, and all returned home pleased with what had been done in the past, and with renewed hope for the future progress of horticulture in our State.

JOHN S. HARRIS, *Secretary.*

Apples from Arkansas.

MR. N. B. PEARCE, Osage Mills, Ark., sends to *Colman's Rural World* several specimens of apples named, upon which he remarks:

"The Schoolfield, Royal Red and Thurman were brought to Benton county by my wife's grandfather, John Spring, many years ago, from Sequache valley, in east Tennessee. The Schoolfield and Thurman were so named by him, having procured the grafts from orchards owned by Schoolfield and Thurman. The Royal Red he named. The Kentucky Red was taken by Col. Anderson from Kentucky to Alabama, and from Alabama he brought them to Benton county some thirty odd years ago, and he named them Kentucky Red, and as such they are known throughout Arkansas and Texas. The most popular we have and so well known by the name given it by Col. Anderson that it will be hard to correct it, if it should prove to be, as you suppose, the Rome Beauty. Some call it New York Pippin. You will confer a favor by letting us hear from you through the *Rural* on these fine apples."

REPLY.—We took your apples to the Missouri State Horticultural Society, at its annual meeting, at Jefferson City. The variety you call the Kentucky Red we know to be the Ben Davis, but the other varieties we could not identify. No one at the meeting could identify the Royal Red or the Schoolfield. Several pronounced the Thurman to be the Ben Davis also. It resembles it much in many respects, but we think it is not.

Floral Notes.

Fumigation for Plants.

Mr. J. C. Niven, of the Hull Botanical Garden, recommends tobacco fumigation (in London *Garden*) for cleaning green flies from certain house plants infested by them. His plan is to lay the plant on its side in a washtub, throw over it a damp towel, or better, "a bit of glazed calico lining," and then, through an opening at the bottom, have "your husband" insert the end of a pipe, and through it let him blow tobacco smoke until the plant gets a good fumigation. The flies will be found at the bottom of the tub when the operation is finished. The plants should be perfectly dry when the operation is performed, but if a towel is used it should be freshly washed and wrung out before using, and be without holes. The pipe stem should reach to the bottom of the tub. As to the husband, if the owner of the plants hasn't got one, a substitute will answer—the point being to effect the fumigation thoroughly.

Funeral Flowers, in New York.

In all our larger cities flowers form a large source of revenue to florists who make bouquets, etc., a specialty. In New York, the aggregate sum spent yearly on flowers is immense. Upon funeral flowers, especially, large sums are expended. The following will show the prices paid for leading sorts in winter: The price of a handsome basket is from five to fifty dollars. Bouquets can be made at from three to twenty-five dollars. Single rosebuds cost twenty-five cents, and carnations twenty cents. Smilax is sold at one dollar a yard, and violets by the dozen at twelve cents. One spray of lilies of the valley costs twenty-five cents.

Verbenas.

It may not be generally known to flower growers that this charming flower can be grown so as to produce flowers from seed the first year, but such is the case. Procure of a reliable seedsman seed saved from the choicest flowers, and sow them any time during March, either in a well prepared hot-bed, or in a box of rich, fine soil, to be kept in the house nights, and cold days; water with warm water as often as dry, and transplant into the garden early in June. If the plants should grow rapidly, they should be transplanted, at least once in the hot-bed or boxes, so as to make them grow stronger, and keep the roots more compact. Plants properly grown in this way will produce larger, and healthier flowers than those propagated in the greenhouse, from cuttings, although they will not be of any particular variety.—*Am. Rural Home.*

Care of Calla Lilies.

A friend, whose lilies are the wonder and admiration of the village, writes *The Laws of Life* as follows:

"I keep my lilies growing all summer, set out on the ground near my dining-room door, in somewhat shady places, because I think them such fine plants to look at. I

have not repotted mine for five years, but every spring and autumn I dig out some soil and put in new, mostly the black, soft, velvety muck that abounds in our swamps. Let from four to six bulbs live in the same large pot. I used to think only one bulb of either Calla or Amaryllis must occupy a pot. From each bulb I have four flowers in a season, and sometimes more, and treated in this way, my Callas have been in bud and blossom ten months of the year, or from September to July inclusive. When I repot Amaryllis, to get bulbs to give to my friends, I often lose a season's flowering. One that I disturbed last summer has missed its autumn flowering, and the other, not disturbed, has given me four stalks of gorgeous, lily-like flowers."

Sickly Plants.

For sickly plants the best way is to turn them out of the pots, shake or wash off all the soil from the roots, and, if any are decayed cut them off; also prune the stems and branches severely and pot again in fresh soil. Set them away in a shady place after giving water sufficient to settle the soil, adding a little from time to time as returning health and growth appears.

The Earliest Peas.

Dr. Hogg reports, in the *Journal of the Royal Horticultural Society*, experiments with different varieties of peas:

Carter's First Crop.—Sown February 23. Fit for use June 9.
Daniel O'Rourke.—Sown February 23. Fit for use June 12.
Early Emperor.—Sown February 23. Fit for use June 19.
Tom Thumb.—Sown February 23. Fit for use June 17.

Flower Garden Hints.

So many people say that their flowers, which once did well, do not thrive any more; and the reason is incomprehensible to them. In many cases the trouble is from worn-out soil; and if a little manure, or a little fresh dirt, be added occasionally, it is wonderful what an effect it will have on the renewed growth of half worn-out root stocks. Some kinds of flowers soon grow surly and bad-tempered, unless they have a complete change of earth once in a while. The verbena is of this character. In perfectly fresh soil—that is, earth which has never grown a verbena before—it grows like a weed; but the next year it is not quite so well, and in a few years it absolutely refuses to creep, run or do anything; and we are forced to confess that the verbena won't do for us as it used to years ago.

Other flowers are not so stubbornly fastidious as the verbena; but still all more or less like to feel rejuvenated by an addition of some kind occasionally to the earth-blessings they have already been treated to. Almost all our best hardy flowers are natives of woods or low, undisturbed lands, where the decaying leaves from the trees, or the washings of higher surface lands, make a new annual entertainment for them; and it has been found by experiment that nothing is so good for these pretty little flowers as well-decayed leaf-mould from the woods, spread around the root stocks just above the ground. But where this cannot be had, any other well-decayed vegetable refuse that may be "laying around loose," will do very nearly as well. Strong, rich manure—barn-yard manure—has not been found very good for garden flowers. It makes the herbage too strong, and the flowers less in proportion. But if nothing more natural can be got at to help the flowers along, and the soil seems exhausted and poor, this will be found much better than leaving the plants to struggle along as best they can. This is the time of the year to think of these things.—*Ex.*

Retired Flowers.

How beautiful are retired flowers! How would they lose their beauty were they to throng into the highway, crying out, "Admire me, I am a violet!" "Dote upon me, I am a primrose!"—*Keats.*

The Pests of Rosebushes.

These are abundant enough, as every one who has tried to cultivate roses knows, unless the experiment has been made in some region exceptionally free from the ills to which these shrubs are heir. Bugs and worms, and flies, too, often cover the bushes, and it is impossible to give infallible directions for their extermination. One cultivator uses carbolic soap with success, while another does better with whale oil soap, and still another accomplishes wonders with tobacco smoke. All the dealers in seeds and horticultural supplies keep the soap and the oil on hand, and tobacco can be had in large quantities at a cheap rate. Perhaps as effectual a method as any is found in the combination of tobacoo smoke with either of the other two agents, the washing being done either before or after the smoking. Now, the smoking, although it is very easy to talk about, has its drawbacks. If, however, it must be done, it is well to do it effectually.

We have seen a device which, so far as the production of smoke goes, is very satisfactory. A common tin box, such as dry mustard is sold in, is taken to the tinman, who cuts a hole about half an inch across in the bottom, and solders on a tapering tube, something like the nozzle of an oil can. In the cover of the box he cuts another hole, and solders on a tube flaring slightly outward, of a size to fit over the nozzle of a pair of bellows. The whole machine looks like one of the affairs which dealers in magic cockroach powders sell for the purpose of blowing the powder into cracks and crannies. The box is filled with tobacco, and a live coal inserted just under the cover. The tube is then placed on the bellows, and the latter put in operation. The result will be a smoke such as no respectable insect will endure for a moment.

It is quite practicable to smoke plants, both in-doors and out, by using a light frame covered with glazed cloth, or other reasonably smoke-proof material. This is made large enough to put bodily over the bush. The nozzle of the smoke bellows may then be introduced through a suitable aperture, and in a few minutes, or seconds, the smoke inside will be almost thick enough to cut with a knife.—*Ex.*

A New Libonia.

One of the most valuable plants for greenhouse decoration is the *Libonia floribunda*, which was introduced only a few years ago. It is a small, half-shrubby plant, which, on account of its abundant and persistent flowering all winter, is especially useful in the cool greenhouse, or under certain circumstances as a window-plant. We have recently received from Mr. John Saul, of Washington, another Libonia, which appears to be an improvement on the older one. It has better foliage, and much larger, brighter, and deeper colored flowers than the other, and is, on these accounts, preferable to it. This new *Libonia* is called *L. Penrhosiensis*. It is said to be a cross between *L. floribunda* and *Sericographis Ghiesbregtiana*, a statement we do not credit, as the difference between it and *L. floribunda* is no greater than often happens with seedlings. Whatever may be its origin, it is an exceedingly bright and pretty plant. The flowers are vermilion red at the base, shading into yellow at the upper part. The Libonias are not suited for cut-flowers, as the blossoms drop very readily. If grown as a window-plant, it should be commenced with in the fall, and brought into flower in the window, as plants taken from a greenhouse into the dry air of a dwelling lose both flowers and leaves, and become unsightly.—*Hearth and Home.*

Sowing Flower Seeds.

We have often, in the spring, heard the cry, "Why don't my flower-plants come up? The seeds are of no account. The seed man has cheated me," etc., etc. We generally listen to such complaints with as much grace as we have, knowing all the time that the fault is generally, not in the seed, or the seed man, but in the would-be cultivator. The principal reasons, "why the seed will not come up" are:

First—The ground is not of the right kind, or has not been properly prepared.

Second—There is not warmth enough to cause the seed to sprout.

Third—The seeds were planted too deep.

But very often the seeds sprout, and yet the little plants fail to grow and mature. The following are the reasons:

The ground, as before, is not of the right kind, or is lumpy, or otherwise in poor condition.

The ground dries and bakes in the sun, whereby the delicate plants are dried up and destroyed.

The plants, if covered with glass, are permitted to get too hot, and are burned up.

To avoid these difficulties, see to it, in the first place, that the soil is suitable, and in proper condition. Select a rich mellow loam, sandy enough to keep from baking. Thoroughly rotted chip manure, mixed with earth and fine sand, or old earthy stable manure, with sand or ashes, or loamy earth from the woods mixed, if necessary, with sand or ashes, will generally answer the purpose. Whatever ingredients are used, recollect that the soil must be rich, mellow and non-baking in the sun.

Having this sort of soil, see next that it is without lumps, chips, or gravel. It will be best to pass it through sieve, especially the part that is to form the upper part of the bed. A common corn-meal sieve will answer the purpose. In covering small seed it will be well to sift the soil over them through a hair or thin cloth sieve.

Seed-Bed.—If no hot-bed or cold-frame is to be used, let the seed-bed be made (out of the soil selected, or prepared as above) in some situation in the garden, sheltered from the cold winds, and having a southern exposure. Then, as soon as the ground becomes warm, say early in April, sow the seed on the surface and cover them with a little fine earth. If the seed be small the earth ought to be sifted upon them. Be careful not to cover the seed too deep. As good a rule perhaps as can be suggested is to cover them about twice the depth of their own thickness.

Do not permit the soil to become too dry. Should the weather be dry after sowing, cover the small seeds with a thin layer of moss, or better, with cedar twigs, or with boards elevated so as to be a few inches above the bed. This partial protection will prevent, in a measure, the drying action of the wind and sun. Recollect, however, that as soon as the plants appear above the soil, the covering must be removed. The soil must be kept damp, but not too wet. Sprinkle the bed at or after sundown. The bed should be raised enough to allow of good drainage.

If the plants are too thick when they come up, it will be best to thin them out. In sowing, let them be thrown evenly and thinly. They are to be transplanted when they have obtained their second leaves and are an inch or two long. The seed-bed is intended to be a help in the cultivation of tender flower-plants. The more hardy kinds can be sowed where they are to grow. Some persons sprout choice seed in a shallow box containing suitable earth, and kept in the house window. The seed-bed in the garden, it must be recollected, will require especial attention, should the nights happen to be frosty.—*Rural Sun.*

Begonias.

This class of plants is better suited for house culture than those more commonly selected. Succulent plants delight in a hot, dry atmosphere. The bloom of the Begonia Magnifica is most beautiful and constant—the petals resemble frosted glass; it has a very delicate, spicy perfume. I have had a specimen in bloom since the first of October. The flower closes at sunset. It requires plenty of water while blooming.—*Am. Farmer.*

Watering Plants.

It is an injury to frequently water plants on the surface soil. Reflection will convince any one that a pot full of soil cannot receive sufficient water to thoroughly wet the roots. It is time saved, once a week, to place the plants in a deep vessel of water, keep in the water until the air bubbles cease; also sponge over and under the foliage. It will keep the plants healthy.—*Am. Farmer.*

Horticultural Notes.

Growing Forest Trees.

R. S. Elliott, the great Kansas tree planter, gives the following directions for starting certain forest trees:

The *white ash* can be grown from seed planted in drills, and then cultivated, thinning out by cutting or transplanting. Plant the seed either in spring or fall. If kept over, it should be wintered in sand and slightly dampened.

The *cottonwood*, for large quantities, is best grown from cuttings. Cut in one foot lengths, and bury in moist, but not wet earth, and set out in the spring.

The Honey locust: Keep the pods till spring, in a dry and cool place, if not convenient to plant in the fall. If planted in spring, the seeds must be immersed in warm water, to soften the horny shell. If planted in the fall this is not necessary; but some may not grow till the second year.

Basswood or *linden* seed can be sown when ripe, or kept in damp sand till spring, most of which will germinate the first season. The seedlings can be readily transplanted.

Destroying Weeds on Lawns.

W. Nichol, in the *Cottage Gardener*, speaks highly of the use of oil of vitriol for eradicating plantain and other weeds on garden lawns, having applied it successfully for several years. He says: "We use a small narrow-necked glass bottle, such as is used by chemists in laboratories, etc. One may be purchased at any chemist's at a very trifling cost. If the glass stopper in the side be kept firmly in its place, the liquor will only come out in drops, and therefore the operator is not so likely to waste the acid or throw it over his clothes, as would otherwise be the case. If the acid can be procured pure, it may be considerably diluted with water, in some cases quite one-half, and it will still be sufficiently strong for all weed-killing purposes."

Cucumbers on Trellises.

The *Gardener's Monthly* says no one who has not tried it, can have any idea of the luxurious growth of a cucumber, when trained on a stake, which has a set of stubby side-branches left along its length; and the crop on some the writer saw so trained was enormous. By this plan the vines occupy less ground, and it is the natural habit of the cucumber to climb instead of trailing on the ground. This is a hint worth remembering, especially by those who have small gardens.

Fertilizers for the Lawn.

F. R. Elliott rocommends in the Cleveland *Herald* the following fertilizers: Bone meal is the only one that can give off a bad odor, and if that could be sown upon a light snow, or just before a rain, the ammonia would probably be washed into the ground before much would pass into the air.

"We are aware that it is a long old time practice to dress the lawn in autumn with coarse manure, and so make the whole foreground of a gentleman's place the apparent receptacle of his stable yard for the winter, but, thanks to our American ideas of propriety, and our knowledge of assimilation of plant food, we now measurably ignore the dogmas of old country gardeners and use specifics, *i. e.*, just now we apply salt at the rate of four bushels to eight bushels per acre, bone meal in same quantity, and plaster one-fourth. The sooner these manurial agents, all except the plaster, are now applied, the better, unless it be upon a lay of land so sloping that the coming rains, with melting of snow and ice, will cause the commingling or detrition of the manures to wash away with the falling water. In such locations we should not apply our specifics as above named, until the snow and ice are gone, but then we would make no delay. The application of the plaster, *i. e.*, its sowing, should be just after the grass has made an inch or more of growth."

New Variety of Mulberry.

A new variety of mulberry is mentioned by French journals as having originated in Hungary, with the long and unpronounceable name, *Morus alba Fegyvernekiana.* The tree itself, however, is not much longer than its name, for it only grows to a height of six feet, and is said to be a dwarf of remarkable beauty.

Madeira Nuts in California.

The walnut (*Juglans Regia*) crop is quite an item in Los Angelos county, California, where more attention has been bestowed upon the propagation of the walnut than in any other part of the State. Fifty thousand pounds of this year's crop have been sold at ten cents per pound.

Prize for Insects.

The Royal Horticultural Society (England), offers a prize of $50 for a collection of British insects injurious to some one order of plant used for food, such as *crucifarae* (cabbage tribe), or the *leguminosoe* (bean tribe), etc.—the collector to be at liberty to select such tribe of plants as he chooses. The insects to be exhibited in their various stages of development, accompanied by specimens, models, or drawings of the injuries caused by them.

An Insect Show.

Paris is also to have an "Insect Show" this month at the Luxembourg. The exhibition will contain noxious and useful *insectivora*, will show the productions of the latter, and specimens of the ravages caused by the former. Among the "usefuls" is a little black fly, myriads of which appeared a few months ago to the great annoyance of the citizen. It would seem that this fly fed upon those infinitesimal insects that infest wall fruit, as well as those which do such injury to corn.

Cabbages.

Although long lists of different sorts are quoted in seedsmen's catalogues, yet but few of them are suited to the wants of the farm gardener. With good seed of any of the following, he will have excellent cabbages:

Bergen Drumhead.—A large sort, and the best keeper of any. Heads very large, round and tinged with purple; short stalk. The best of the Drumheads, but needs to be set out earlier than the following:

Flat Dutch.—Another large sort, with very broad flat heads, and of a light green color. For fall and early winter use it is a very good sort, but with me has been a poor keeper.

Stone Mason.—A solid but not large head, in fact rather small for market, but of excellent quality and a fair keeper. Their size is unimportant; it is always in good demand. It is excellent for late or delayed planting, as it matures quickly.

Drumhead Savoy.—For table the best of all, but the public does not yet know it, and only a small number should be grown. A few freezings only make it the more tender and sweet. An excellent keeper.

Red Dutch.—This should be planted at least two weeks before even the Bergen Drumhead, and upon richer soil. There is a limited call for it for pickling, and at the restaurants and oyster saloons.—*Prairie Farmer.*

Fruit Packing in New Jersey.

The New Jersey *Farmer* says the packing houses of Brighton, N. J., three in number, have put up about 1,500,000 cans of fruit and vegetables this season, paying out as high as $6,000 per week for labor. It also says that this year tomatoes have paid the grower from $75 to $125 per acre; Lima beans, $70 to $100; peas $50 to $100. Strawberries paid from $100 to $200, and in some cases high as $400, but this was rare.

The Eumelan Grape.

Peter M. Gideon, of Minn., writes to the *Prairie Farmer* that, in his opinion, the Eumelan is the best of the black grapes, and we quote his remarks, which seem to us justifiably enthusiastic:

"Of all black grapes that I have seen or tasted, the Eumelan is the earliest, best table grape, splendid in bunch and berry, very saleable, first in market; a prodigious bearer, always ripe before early frosts; strong grower, hardy vine, ripening more wood than any other vine we had, notwithstanding it yielded double the fruit of any other vine of its size, the yield being some seventy-five pounds. Every bunch ripened evenly, though only ten feet of space on trellis, whilst two Concords, same age, each nearly as large (thirty feet on trellis), yielded only about twenty pounds, same soil and culture, less in bunch, and not so good in quality. Evidently the Eumelan is the grape for the North. Safe in all seasons, and no dropping of berries if left out as long as any grape dare be left out of doors. But as to its wine qualities, I can't say; don't care. I grow grapes only for the joy and comfort of home.

If short of space, the Eumelan is the grape. It gives the greatest yield, is sure to ripen, and is the most luscious of all black grapes we have yet seen. But, if there is space, and a variety is wanted, then for quality, and a sure crop, early to ripen, the Croton has no superior among the white grapes, so far as we have tested. And of the red grapes, the Iona is our best, though not so early as either of the preceding, and requires a southern exposure, well sheltered from cold winds, a good warm soil, with clay, or, better, clay and gravel, to insure well ripened fruit every year. But when well ripened, as they ripen on our grounds, they are truly luscious, keeping well into winter, in a common room, on shelves or in baskets, gradually drying into good raisins, without the addition of sugar."

Remedy for the Striped Bug.

Some weeks ago I saw, in the *Farmer*, a recommendation of the use of ground or calcined plaster as a remedy for striped bugs. My own experience allows me to tell you how I have improved on that remedy. Having occasion to use Paris green and calcined plaster, in proportion of one of the former to fifteen of the latter, as a destroyer of the potato bug, I tried the stuff on squash, melon and cucumber vines; with me, the mixture dusted on from a common dredging box, has proved equally effectual against the Colorado potato beetle and the striped bug. On squashes of the tenderest variety of foliage, like the Hubbard, for instance, and on the hardier, like Cymlin and the winter Crookneck, this mixture, put on while the plant is wet or dry, does not injure them; and so of musk melons and cucumbers. The water melon, however, does not bear such treatment, and I recommend that the mixture be used with care. I give my experience in this business—limited as it is—because I know with what extreme difficulty cucumber and other vines are protected from the striped bug.—*Cor. of Prairie Farmer.*

To Make Grafting Wax.

Grafting wax is useful in pruning to cover wounds, and hence it is useful to have on hand, even when not expecting to graft. The proportions of ingredients (tallow, beeswax and rosin), are one, two and four in the order named, though the *London Garden* says that when beeswax is very expensive one-third less will do. Stir well when made, and keep in a cool place. We will add—to keep it from sticking to the hands and fingers when mixing or applying it, keep them well greased; if you do not, it will stick closer than a brother.

Small Evergreens.

We are very frequently asked the question, as to when is the best time to plant small evergreens? our answer is, any time when the ground is in a mellow, free condition (except the months of July and August, as being too hot), at all the other seasons we would plant subject to the above considerations; yet there are seasons and conditions when success may be deemed more certain, and these are—first, if the soil s light and dry, in Maryland and Virginia the months of March and April would be

the best; second, if your land is heavy and wet, then we would select May and June; for ourselves we plant most of ours in the latter month. The many failures in the planting of evergreens does not depend so much on the time in which it is done, as the manner in which it is performed, for it is no unusual thing to see a tree three to four feeet high, have its roots (that have been dried by the wind and scorched by the sun), stuck into a hole not larger or deeper than a gentleman's dress hat, whereas it ought to have a hole provided for its roots from three to four feet wide. There is another practice among planters, that is, in planting everything too deep in the ground. Old mother nature never gives herself up to such follies as we see perpetrated by men, who are deemed sensible in other matters; our advice, therefore, is, to keep the roots near the surface, or not deeper than they stood in the nursery rows or their native wilds.—*Am. Farmer.*

Editorial Notices.

Handsome Catalogue.

Washburn & Co. have issued a very handsome Catalogue this year. The engraved title page, and the colored plate of flowers, inside, are in excellent taste. The plate is much the best issued, this year, from any eastern seed house.

Bone Fertilizers.

We may be pardoned for referring to this topic. We have used Lister's *Bone Meal* and other fertilizers for six years, and will *not use any other*. We not only believe them to be the purest of any in the market, but the firm are of such acknowledged reliability and honesty in transactions that they deserve wider publicity. To gardeners and fruit growers, who have to use the various preparations of bone for their trees and vines, we can recommend cheerfully the above firm.

Publications Received.

California, by Marshall P. Wilder—Mr. Wilder's Lecture republished by request.

O. S. Wildey—Woodward & Co., Madison, Wis.—Catalogue Fruit and Ornamental Trees.

Storrs, Harrison & Co., Painesville, O.—Wholesale Trade List; Spring Catalogue of New Plants.

Dick Radclyffe & Co., London, England—Spring Catalogue Seeds.

D. C. Benton, Quincy, Ill.—Wholesale Price List, 1873.

J. W. Adams, Springfield, Mass.—Trade List Nursery Stock.

L. D. Payne, Kasota, Minn.—Circular of Paper Berry Baskets.

Miller & Hayes, Germantown, Pa.—Rose Catalogue; Catalogue of Plants, 1873.

P. J. Berkmans, Augusta, Ga.—Catalogue of Plants, 1873.

Robert Veitch, New Haven, Ct.—Catalogue of Bedding Plants, 1873.

Ellwanger & Barry, Rochester, N. Y.—Select List New Rose Trees; Descriptive Catalogue of Plants; Descriptive Catalogue of Fruits; Wholesale Nursery Catalogue.

Dingee & Conard Co., West Grove, Pa.—Rose Catalogue.

Transactions Nebraska State Horticultural Society, 1871.

John Saul, Washington, D. C.—Catalogue of New Plants, 1873.

Wm. F. Porter, Warren O.—Catalogue of New and Rare Plants, 1873.

H. Cannell's Illustrated Floral Guide, Woolwich, England.

E. G. Henderson & Son, London, England—Catalogue Seeds.

Nicholas Cole, Pella, Iowa—Seed Grower's Catalogue.

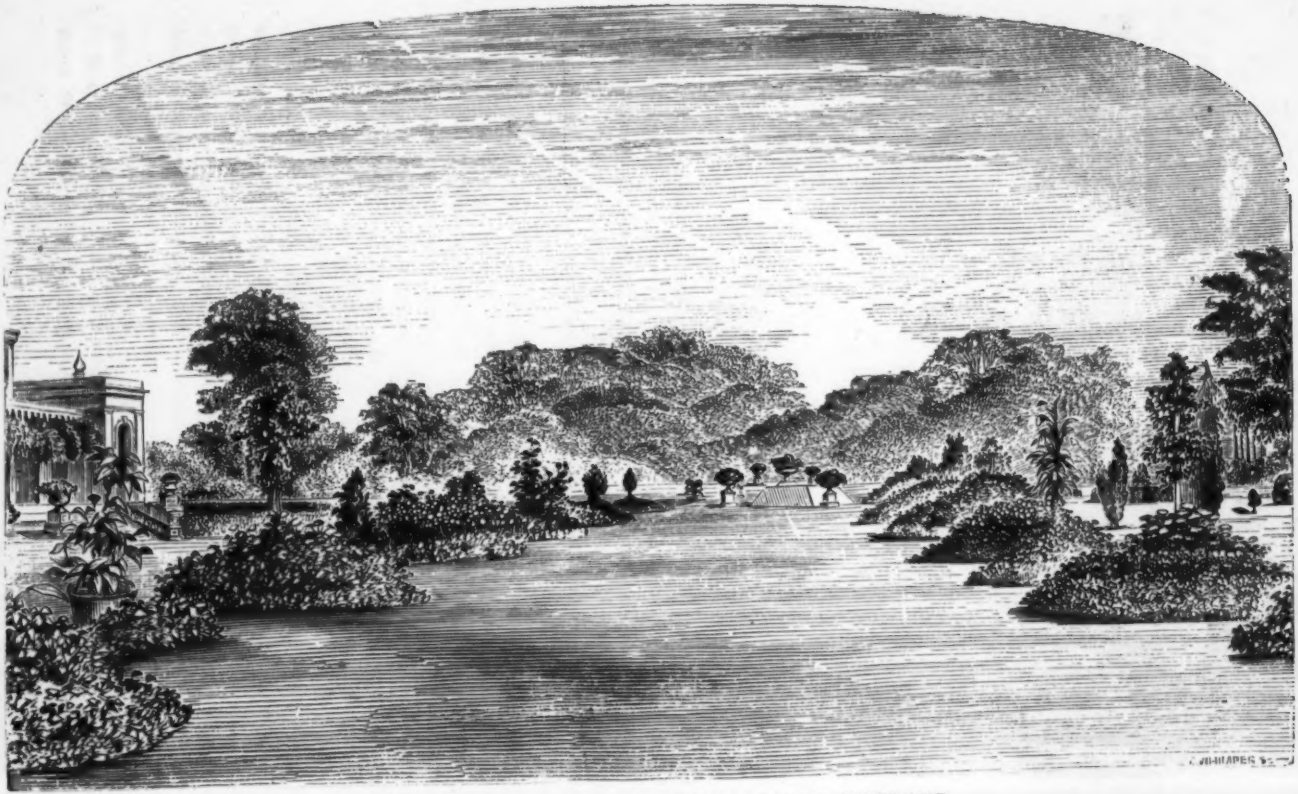
Beach, Son & Co., Brooklyn, N. Y.—The Flower Garden.

D. M. Ferry & Co., Detroit. Mich.—Catalogue of Seeds.

Olin Bros., Newark, N. J.—Floricultural Gardens.

J. Cochrane, Havana, Ills.—Catalogue of Plants.

Washburn & Co., Boston, Mass.—Amateur Cultivator's Guide, 1873.



FLORAL AVENUE AT PUTTERIDGEBURY, ENGLAND.